



PAN AFRICA CHRISTIAN UNIVERSITY

BSCIT

END OF TERM EXAMINATION

DEPARTMENT: COMPUTING & INFORMATION TECHNOLOGY

COURSE CODE: BCIT 206

CAMPUS: ROYSAMBU

COURSE TITLE: COMPUTER ORGANIZATION & ARCHITECTURE

EXAM DATE: DAY OF WEEK, DATE (DDTH MONTH YEAR)

TIME: START HOUR – END 13:00-17:00 HRS

INSTRUCTIONS

- This exam script has **TWO (2)** sections.
- Read all questions carefully before attempting.
- Answer All questions in Section **A** and any other THREE questions in Section **B**.
- Write only your **student number** on the answer booklet provided.
- None programmable calculators permitted
- Calculators on phones, tablets and computers are NOT permitted in Theory Papers

SECTION A

(Answer ALL questions in this section)

Question 1

- a) Explain your understanding of the terms organization and architecture as used in computer organization and architecture **(4 Marks)**
- b) XYZ is an established computer system company that is planning to develop a new computer system. Explain THREE factors they should consider when designing the new computer model **(6 Marks)**

QUESTION 2

- a) Describe the TWO technologies used in the construction of digital gates **(4 Marks)**
- b) Describe THREE components of a computer as an interconnected system **(6 Marks)**

QUESTION 3

- a) Distinguish register-memory from register-register **(4 Marks)**
- b) The CPU executes the instructions in a series of small steps, often referred to as the fetch-decode-execute cycle which is central to the operation of all computers. Explain this concept in relation to the ordinary functions of a computer architect **(6 Marks)**

QUESTION 4

- a) Many applications of digital logic require a circuit with multiple inputs and outputs in which the outputs are uniquely determined by the current inputs, also called a combinational circuit. Identify FOUR combinational circuits used in

computer organization and architecture

(4

Marks)

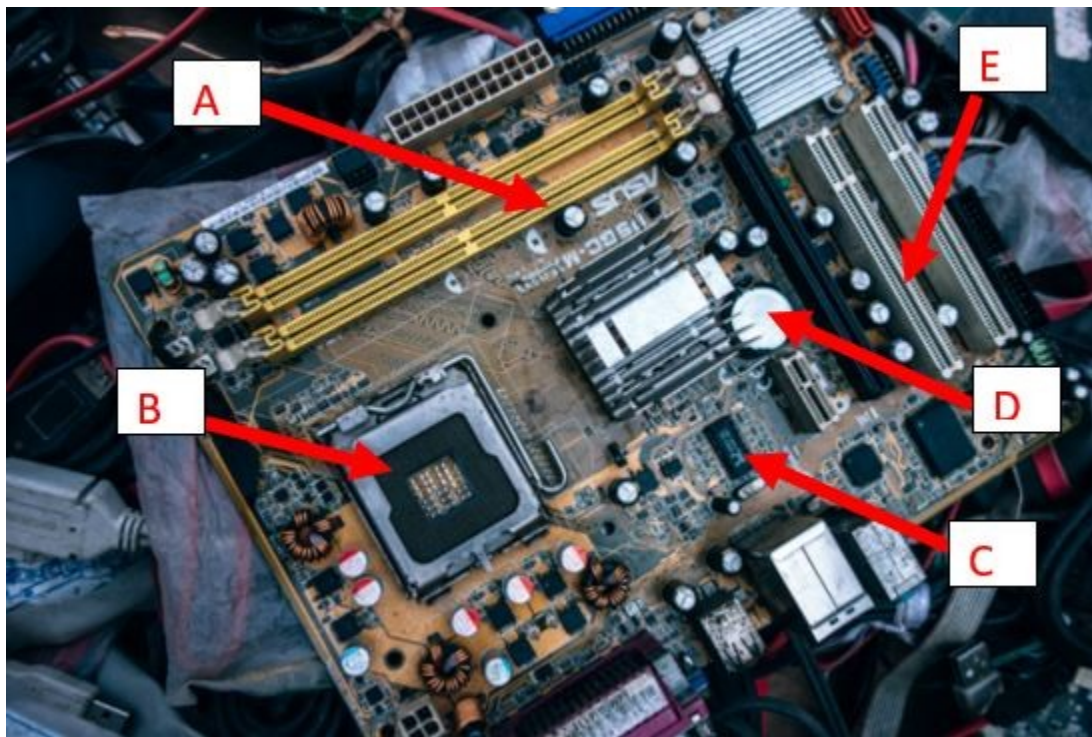
- b) Modern computers have gone through a series of evolutions in what is also called computer generations. Giving examples, describe any THREE of these generations of computers

(6

Marks)

QUESTION 5

Study the image below, answer the following questions:



- a) Identify the parts labeled A, B, C, D, and C

(5 Marks)

- b) Explain the significance of each of the parts identified in (a) above (5 Marks)

QUESTION 6

- a) Explain the rationale for parallelism in computer architecture.

(2 Marks)

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- b) State THREE reasons promoting the use of assembly language by modern computer architects **(3 Marks)**
- c) Describe the concept of pipelining as used in computer architecture **(5 Marks)**

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